



Test Report

Report No: CX/2017/80256

Date: 2017/10/31

ZEROPLUS TECHNOLOGY CO., LTD.
2F., NO. 123, JIAN 8TH RD., ZHONGHE DIST., NEW TAIPEI CITY, 23585, TAIWAN

The following sample(s) was/were submitted and identified by/on behalf of the applicant as :

Sample Submitted By : ZEROPLUS TECHNOLOGY CO., LTD.
 Sample Description : LOGIC ANALYZER (邏輯分析儀)
 Style/Item No. : LAP-F1(XXXXXX)M
 Other Info. : THE 1ST/2ND X COULD BE 40 OR 64 FOR CHANNEL DIFFERENCES AND THE 3RD/4TH/5TH/6TH X COULD BE 4/8/16/32/64/128/256/512/1024 FOR MEMORY CAPACITY DIFFERENCES
 Sample Receiving Date : 2017/08/18
 Testing Period : 2017/08/18 to 2017/09/01

Test Result(s) : Please refer to next page(s).

Conclusion : Based upon the performed tests on submitted samples, the test results comply with the limits of RoHS Directive 2011/65/EU and amending Directive (EU) 2015/863 with the exempted materials below according to the declaration from applicant:
 1. SILVER METALLIC NUT (No.1.6) in Table 1: Lead (Pb)
 ("6(c), Copper alloy containing up to 4 % lead by weight" in Directive 2011/65/EU)

Wendy
 Wendy Wei / Supervisor
 Signed for and on behalf of
 SGS TAIWAN LTD.
 Chemical Laboratory - Taipei



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Test Report

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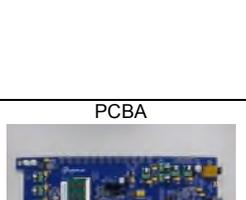
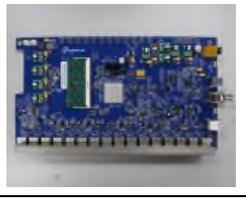
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1. Material Fraction Composition

Table 1 The results of XRF screening and chemical test

No.	Type of Components	Description	Figure	MDL Category	X-ray Screening		UV	ICP-AES	GC-MS	Other Chemical Test	Note
					Element	Data	Cr (VI)	Pb/Cd/Hg	PBB/PBDE		
1	CASE	1.1 SILVERY METALLIC COVER WITH BLUE PAINT		Metals	Pb	n.d.		---			
					Cd	n.d.		---			
					Hg	n.d.		---			
					Cr	n.d.					
					Br	n.d.					
					Cr(VI)			---			
					PBB			---			
					PBDE			---			
					1.2 SILVERY METALLIC NUT			Metals			
	Cd	n.d.	---								
	Hg	n.d.	---								
	Cr	714									
	Br	n.d.									
	Cr(VI)		n.d.								
	PBB		---								
	PBDE		---								
	1.3 SILVERY LABEL WITH BLACK PRINT		Polymers	Pb			n.d.			---	
				Cd	n.d.	---					
Hg				n.d.	---						
Cr				n.d.							
Br				n.d.							
Cr(VI)					---						
PBB					---						
PBDE					---						

No.	Type of Components	Description		Figure	MDL Category	X-ray Screening		UV	ICP-AES	GC-MS	Other Chemical Test	Note
						Element	Data	Cr (VI)	Pb/Cd/Hg	PBB/PBDE		
1	CASE	1.4	BLACK PLASTIC COVER WITH SILVERY PRINT		Polymers	Pb	n.d.		---		Refer to Table 3	
						Cd	n.d.		---			
						Hg	n.d.		---			
						Cr	n.d.					
						Br	n.d.					
						Cr(VI)			---			
	PBB			---								
	PBDE			---								
		1.5	BLACK PAD		Polymers	Pb	n.d.		---		Refer to Table 3	
						Cd	n.d.		---			
						Hg	n.d.		---			
						Cr	n.d.					
Br						n.d.						
Cr(VI)							---					
PBB			---									
PBDE			---									
	1.6	SILVERY METALLIC NUT		Metals	Pb	17200		*2				
					Cd	n.d.		---				
					Hg	n.d.		---				
					Cr	n.d.						
					Br	n.d.						
					Cr(VI)			---				
PBB			---									
PBDE			---									
	1.7	SILVERY METALLIC RING		Metals	Pb	n.d.		---				
					Cd	n.d.		---				
					Hg	n.d.		---				
					Cr	365						
					Br	n.d.						
					Cr(VI)			---				
PBB			---									
PBDE			---									

No.	Type of Components	Description		Figure	MDL Category	X-ray Screening		UV	ICP-AES	GC-MS	Other Chemical Test	Note	
						Element	Data	Cr (VI)	Pb/Cd/Hg	PBB/PBDE			
1	CASE 	1.8	SILVERY METALLIC SCREW		Metals	Pb	n.d.		---				
						Cd	n.d.		---				
						Hg	n.d.		---				
						Cr	n.d.						
						Br	n.d.						
						Cr(VI)			---				
						PBB			---				
						PBDE			---				
						CASE 	1.9		SILVERY METALLIC SCREW				
	Cd	n.d.	---										
	Hg	n.d.	---										
	Cr	n.d.											
	Br	n.d.											
	Cr(VI)		---										
	PBB		---										
	PBDE		---										
	CASE 	1.10	BLACK METALLIC RING		Metals			Pb		n.d.		---	
						Cd	n.d.	---					
Hg						n.d.	---						
Cr						107							
Br						n.d.							
Cr(VI)							---						
PBB							---						
PBDE							---						
2						PCBA 	2.1	PCBA		Composite Material		Pb	
	Cd	---	n.d.										
	Hg	---	n.d.										
	Cr	---											
	Br	---											
	Cr(VI)		n.d.										
	PBB		n.d.										
	PBDE		n.d.										

No.	Type of Components	Description		Figure	MDL Category	X-ray Screening		UV	ICP-AES	GC-MS	Other Chemical Test	Note	
						Element	Data	Cr (VI)	Pb/Cd/Hg	PBB/PBDE			
2	PCBA	2.2	ELECTRONIC COMPONENT		Composite Material	Pb	171		---				
						Cd	n.d.		---				
						Hg	n.d.		---				
						Cr	151						
						Br	n.d.						
						Cr(VI)			---				
						PBB			---				
						PBDE			---				
		2.3	ELECTRONIC COMPONENT		Composite Material	Pb	n.d.		---				
						Cd	n.d.		---				
						Hg	n.d.		---				
						Cr	n.d.						
						Br	n.d.						
						Cr(VI)			---				
						PBB			---				
						PBDE			---				
	2.4	BLACK CORE FRAME		Composite Material	Pb	n.d.		---					
					Cd	n.d.		---					
					Hg	n.d.		---					
					Cr	n.d.							
					Br	n.d.							
					Cr(VI)			---					
					PBB			---					
					PBDE			---					
	2.5	COPPER METALLIC WIRE		Metals	Pb	n.d.		---					
					Cd	n.d.		---					
					Hg	n.d.		---					
					Cr	n.d.							
					Br	n.d.							
					Cr(VI)			---					
					PBB			---					
					PBDE			---					

No.	Type of Components	Description		Figure	MDL Category	X-ray Screening		UV	ICP-AES	GC-MS	Other Chemical Test	Note	
						Element	Data	Cr (VI)	Pb/Cd/Hg	PBB/PBDE			
2	PCBA	2.6	ELECTRONIC COMPONENT		Composite Material	Pb	n.d.		---				
						Cd	n.d.		---				
						Hg	n.d.		---				
						Cr	n.d.						
						Br	n.d.						
						Cr(VI)			---				
						PBB			---				
	PBDE		---										
		2.7	BROWN POLYMER JACKET		Polymers	Pb	n.d.		---				
						Cd	n.d.		---				
						Hg	n.d.		---				
						Cr	n.d.						
						Br	n.d.						
						Cr(VI)			---				
						PBB			---				
	PBDE		---										
	2.8	SILVERY METALLIC COVER		Metals	Pb	n.d.		---					
					Cd	n.d.		---					
					Hg	n.d.		---					
					Cr	n.d.							
					Br	n.d.							
					Cr(VI)			---					
					PBB			---					
PBDE		---											
	2.9	SILVERY METALLIC COVER		Metals	Pb	n.d.		---				*5	
					Cd	n.d.		---					
					Hg	n.d.		---					
					Cr	182000							
					Br	n.d.							
					Cr(VI)			n.d.					
					PBB			---					
PBDE		---											

No.	Type of Components	Description		Figure	MDL Category	X-ray Screening		UV	ICP-AES	GC-MS	Other Chemical Test	Note	
						Element	Data	Cr (VI)	Pb/Cd/Hg	PBB/PBDE			
2	PCBA	2.10	BLACK PLASTIC HOUSING		Polymers	Pb	n.d.		---				
						Cd	n.d.		---				
							Hg	n.d.	---				
							Cr	n.d.					
							Br	n.d.					
							Cr(VI)		---				
							PBB			---			
							PBDE			---			
			2.11	BLUE PLASTIC HOUSING		Polymers	Pb	n.d.		---			
	Cd						n.d.	---					
							Hg	n.d.	---				
							Cr	n.d.					
						Br	48400						
						Cr(VI)		---					
						PBB			n.d.			Refer to Table 3	
						PBDE			n.d.				
		2.12	SILVERY METALLIC COVER		Metals	Pb	n.d.		---				
Cd						n.d.	---						
						Hg	n.d.	---					
						Cr	n.d.						
						Br	n.d.						
						Cr(VI)		---					
						PBB			---				
						PBDE			---				
		2.13	WHITE PLASTIC HOUSING		Polymers	Pb	n.d.		---				
Cd						n.d.	---						
						Hg	n.d.	---					
						Cr	n.d.						
						Br	n.d.						
						Cr(VI)		---					
						PBB			---				
						PBDE			---				

No.	Type of Components	Description		Figure	MDL Category	X-ray Screening		UV	ICP-AES	GC-MS	Other Chemical Test	Note	
						Element	Data	Cr (VI)	Pb/Cd/Hg	PBB/PBDE			
3	FAN	3.1	BLACK PLASTIC FRAME		Polymers	Pb	n.d.		---		Refer to Table 3		
						Cd	n.d.		---				
						Hg	n.d.		---				
						Cr	n.d.						
						Br	48100						
						Cr(VI)			---				
						PBB							n.d.
						PBDE							n.d.
							3.2		BLACK PLASTIC JACKET				
	Cd	n.d.	---										
	Hg	n.d.	---										
	Cr	n.d.											
	Br	n.d.											
	Cr(VI)		---										
	PBB			---									
	PBDE			---									
		3.3	SILVERY METALLIC WIRE		Metals			Pb		n.d.		---	
						Cd	n.d.	---					
Hg						n.d.	---						
Cr						n.d.							
Br						n.d.							
Cr(VI)							---						
PBB								---					
PBDE								---					

Table 2 The test results on the PCBA (CX/2017/80256-2.1) by point analysis (Unit: mg/kg)

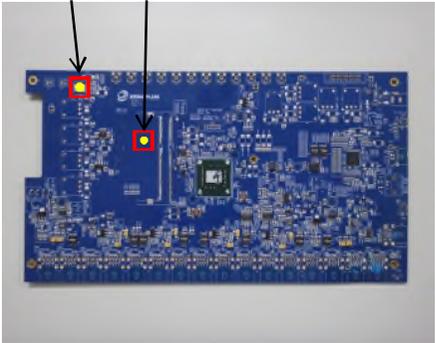
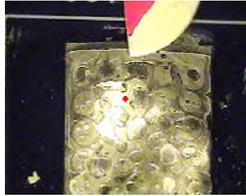
Point Analysis	No.	Figure	Material	X-ray Screening		
			Type	Element	Data	Note
	1		Metals	Pb	119	
				Cd	n.d.	
				Hg	n.d.	
				Cr	n.d.	
				Br	n.d.	
	2		Composite Material	Pb	n.d.	
				Cd	n.d.	
				Hg	n.d.	
				Cr	n.d.	
				Br	n.d.	

Table 3 The test results of Phthalates (Unit: mg/kg)

Test Item (s):	Method	MDL	Result				
			1.4	1.5	2.1	2.11	3.1
BBP (Butyl Benzyl phthalate) (CAS No.: 85-68-7)	With reference to IEC 62321-8 (2017). Analysis was performed by GC/MS.	50	n.d.	n.d.	n.d.	n.d.	n.d.
DBP (Dibutyl phthalate) (CAS No.: 84-74-2)		50	n.d.	n.d.	n.d.	n.d.	n.d.
DEHP (Di- (2-ethylhexyl) phthalate) (CAS No.: 117-81-7)		50	n.d.	n.d.	n.d.	n.d.	n.d.
DIBP (Di-isobutyl phthalate) (CAS No.: 84-69-5)		50	n.d.	n.d.	n.d.	n.d.	n.d.



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Test Item	MDL (mg/kg)			XRF screening threshold	Test method
	Category Element	Polymers	Composite Material		
XRF (X-ray fluorescence)	Pb	50	100	100	With reference to IEC 62321-3-1 (2013)
	Cd	50	50	50	
	Hg	50	100	100	
	Cr	50	100	100	
	Br	50	100	n.a.	

Test Item (s)	Test method	MDL	Unit
Cr(VI)	With reference to IEC 62321-7-2 (2017) and performed by UV-VIS. (For Polymers and Electronics)	8	mg/kg
	With reference to IEC 62321-7-1 (2015) and performed by UV-VIS. (For Coatings on Metals) (#2)	0.1	µg/cm ²
Pb/Cd	With reference to IEC 62321-5 (2013) and performed by ICP-AES.	2	mg/kg
Hg	With reference to IEC 62321-4 (2013) and performed by ICP-AES.	2	mg/kg

Test Item (s)	Unit	Method	MDL (mg/kg)	
PBBs				
Monobromobiphenyl	mg/kg	With reference to IEC 62321-6 (2015) and performed by GC/MS.	5	
Dibromobiphenyl	mg/kg		5	
Tribromobiphenyl	mg/kg		5	
Tetrabromobiphenyl	mg/kg		5	
Pentabromobiphenyl	mg/kg		5	
Hexabromobiphenyl	mg/kg		5	
Heptabromobiphenyl	mg/kg		5	
Octabromobiphenyl	mg/kg		5	
Nonabromobiphenyl	mg/kg		5	
Decabromobiphenyl	mg/kg		5	
PBDEs				
Monobromodiphenyl ether	mg/kg		5	
Dibromodiphenyl ether	mg/kg		5	
Tribromodiphenyl ether	mg/kg		5	
Tetrabromodiphenyl ether	mg/kg	5		
Pentabromodiphenyl ether	mg/kg	5		
Hexabromodiphenyl ether	mg/kg	5		
Heptabromodiphenyl ether	mg/kg	5		
Octabromodiphenyl ether	mg/kg	5		
Nonabromodiphenyl ether	mg/kg	5		
Decabromodiphenyl ether	mg/kg	5		

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1. mg/kg = ppm
2. MDL = Method detection limit
3. n.d. = not detected or lower than MDL
4. "---" = not conducted
5. n.a. = not applicable
6. " - " = Not Regulated
7. The XRF result of Br for metal sample is conducted from semi-quantitative method of polymer. If the Br result is shown as n.d., the reading will be less than 100ppm.
8. (#2):
 - a. The sample is positive for Cr(VI) if the Cr(VI) concentration is greater than 0.13 $\mu\text{g}/\text{cm}^2$.
The coating is considered to contain Cr(VI).
 - b. The sample is negative for Cr(VI) if Cr(VI) is n.d. (concentration less than 0.10 $\mu\text{g}/\text{cm}^2$).
The coating is considered a non-Cr(VI) based coating.
 - c. The result between 0.10 $\mu\text{g}/\text{cm}^2$ and 0.13 $\mu\text{g}/\text{cm}^2$ is considered to be inconclusive - unavoidable coating variations may influence the determination.

9. Magnetic samples can not be located on test position and there are breakdown risks on XRF equipment. Therefore, this kind of sample will be conducted chemical test directly.
10. If the test result by EDXRF analysis is greater than XRF screening threshold, the test sample should be further conducted by chemical test.

Mark	Description of Mark
*1	The sample weight is not enough to conduct chemical tests.
*2	The item is exempted from EU RoHS directive.
--*2	The item might be exempted from EU RoHS directive.
*3	The result was retested after regetting the same sample from client.
*4	The sample is provided separately from the client.
*5	Adopting modified IEC 62321-7-1(2015), due to the test area less than 25 cm^2
*6	The test item was tested by dry base.
*7	This sample follows requirement of client to conduct directly chemical tests.